

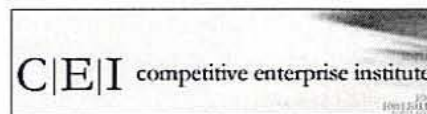
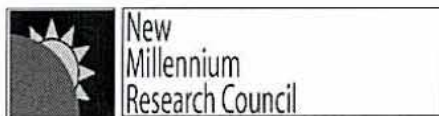
ATTACHMENT 1

The Effects of Bargain Wholesale Prices on Local Telephone Competition: Does Helping Competitors Help Consumers?

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Jointly released by



June 2003

The Effects of Bargain Wholesale Prices on Local Telephone Competition: Does Helping Competitors Help Consumers?

Stephen Pociask*

Executive Summary

This paper investigates the effects of regulations that require incumbent local exchange carriers (ILECs) to lease their network (referred to as “unbundled network elements” or UNEs¹) to competitive local exchange carriers (CLECs) at very low prices. While intended to stimulate competition for local telephone services and speed competitive benefits to consumers, low UNE and UNE-P wholesale prices appear to discourage industry investment and reduce consumer choice and benefits. The major findings of this paper include:

- CLECs are abandoning their own networks to lease UNEs at bargain prices. In other words, the recent increase in leased lines is coming at the expense of lines built and owned by CLECs themselves.
- UNE prices are set so low they approach predatory prices, prices that discourage CLECs from investing in alternative telecommunications infrastructure. These low UNE prices make the ILECs’ wholesale services unprofitable, which discourages continued ILEC investment. As a direct result of low wholesale prices, industry-wide telecommunications investment has fallen 40% over the last two years.
- Public policies that impede telecommunications investment harm the economy. This study finds that the fall in telecommunications investment results in an annual decline in economic output equivalent to \$101 per average household annually. In contrast, the benefits of price reductions resulting from local competition are estimated to be \$11.41 per household annually. Thus, this study

* Stephen Pociask is president of TeleNomic Research, an economic consulting firm specializing in IT public policy issues. This research was jointly funded and released by the New Millennium Research Council (www.newmillenniumresearch.org) and the Competitive Enterprise Institute (www.cei.org), both based in Washington, DC.

¹ UNEs represent the leasing of distinct parts of the telephone network. The recombination of UNEs into a complete standalone telephone service is referred to as a UNE-P (unbundled network element platform).

finds that the economic costs associated with setting artificially low wholesale prices far outstrip the consumer financial benefits.

In summary, if low UNE and UNE-P wholesale prices were intended to save consumers money, they have been a dismal failure. CLECs are now abandoning their investments and riding on the same network that consumers always had available to them. Because UNE-P regulations are usurping market forces and harming facility-based CLECs and ILECs, these regulations have created more harm than good for consumers. Therefore, regulators should reevaluate current policies and promote new policies that encourage facility investment instead of freeloading.

The Effects of Bargain Wholesale Prices on Local Telephone Competition:

Does Helping Competitors Help Consumers?

Stephen Pociask

Introduction and Purpose

This paper analyzes whether consumers benefit from a public policy that sets very low UNE prices. Those favoring low UNE prices suggest that they are beneficial to CLECs and therefore, heighten competition and increase consumer benefits.² Opponents contend that bargain UNE prices force ILECs to subsidize CLECs.³ Such subsidies give an advantage to some rivals at the expense of others and produce a regulatory outcome that cannot be characterized as competitive. Therefore, those opposed to low UNE prices contend that mandated subsidies undermine competition and lead to reduced benefits for consumers.

Whether or not low UNE prices are good for consumers is a testable hypothesis and one that this paper will explore. Specifically, this paper addresses whether consumers receive more benefits than harm from low UNE prices. To answer this question, one must first determine if these prices amount to a subsidy, and if so, whether this subsidy is helping consumers more than it is hurting them.

Telecommunications Investment is Inextricably Linked to the Economy

The telecommunications and information technology (IT) sector is enormously important to the overall health of the U.S. economy.⁴ From 1994 to 1998, the IT sector's employment grew 30%, adding 1.2 million new jobs.⁵ On average, IT jobs pay more than double (\$73,800) the wages of other private sector jobs (\$35,000).⁶ In their latest *Occupational Outlook Handbook*, the Bureau of Labor Statistics projects eight of the nine

² "The UNE-P Fact Report: January 2003," Pace Coalition, p. 2.

³ Josh Long, "UNE-P: Are the Bells Subsidizing Their Rivals?" Phone+, Oct. 2002.

⁴ The U.S. Department of Commerce has combined telecommunications and computer service and manufacturing industries into a single category, referred to as the *Information Sector*.

⁵ *Digital Economy 2000*, Economics and Statistics Administration, U.S. Department of Commerce.

⁶ *Digital Economy 2002*, Chapter 5, p. 41.

fastest growing occupations to be in the IT sector.⁷ Thus, telecommunications and high technology industries are an important economic driver for stimulating job growth and creating real wage increases for the U.S. economy.

The same is true for investment. According to a number of studies, telecommunications and IT capital investment has been a key factor contributing to the health of the overall economy. In one such study, Kevin Stiroh showed that industries with higher capital stock in telecommunications and computing equipment experienced higher productivity gains.⁸ This conclusion is consistent with other studies. For instance, a Department of Commerce study found that IT-intensive industries were responsible for *all* of the productivity gains experienced in the economy from 1989 to 2000, as well as contributing to lower overall inflation.⁹ Another study estimated that IT investment was responsible for 40% of the growth in total factor productivity and 68% of the accelerated growth in labor productivity.¹⁰ In terms of economic output, IT capital investment contributed to 22% of Gross Domestic Product (GDP) growth.¹¹ This is a remarkable statistic, considering that the total output of the communications services industry accounts for only 2% of GDP.

As these studies demonstrate, the link between IT/telecommunications investment and economic growth is indisputable and significant. This suggests that public policies that encourage the deployment of IT and telecommunications infrastructure stimulate economic growth and productivity. Conversely, regulations that reduce IT and telecommunications investment have a negative impact on economic growth.

Ironically, as telecommunications rivals entered the local telephone services market, the promise that these competitors would bring increased telecommunications investment

⁷ Occupational Outlook Handbook: 2002-2003 Edition, Bureau of Labor Statistics, Washington, DC, Chapter on Tomorrow's Jobs, Chart 8.

⁸ Kevin J. Stiroh, "Investing in Information Technology: Productivity Payoffs for U.S. Industries," *Current Issues in Economics and Finance*, Federal Reserve Bank of New York, 7:6, June 2001.

⁹ *Digital Economy 2002*, Chapter 4, p. 34.

¹⁰ Stephen D. Oliner and Daniel E. Sichel, "The Resurgence of Growth in the Late 1990s: Is Information Technology the Story?" *Journal of Economic Perspectives*, 14:4, Fall 2000, pp. 3-22.

¹¹ Dale W. Jorgenson, "Information Technology and the U.S. Economy," *American Economic Review*, 91(1), March 2001, pp. 1-32.

and greater economic benefits has faded away. Over the past two years, telecommunications capital spending has fallen over forty percent.¹² One-half million jobs have been lost in the IT sector during that time.¹³ The telecommunications industry has experienced an increase of \$800 billion in corporate debt and a two trillion dollar decrease in market valuation.¹⁴ As a result, the market valuation for telecommunications equipment manufacturers alone fell one trillion dollars in one year.¹⁵ The poor condition of the telecommunications industry, by correlation, provides one very compelling reason for the weak economy.

The timing of the contraction in telecommunications investment is particularly noteworthy, considering the Telecommunications Act of 1996 (referred to as *the Act*) had set out, just years before, to encourage entry into and investment in the IT sector. Congress had expected market entry would encourage industry innovation and lead to an influx of new investment – all for the benefit of consumers. This, in fact, did happen when the transportation industry was deregulated starting in the mid-1970s.¹⁶ Instead of similar benefits, local telecommunications regulations have stifled industry investment, negating any obvious consumer benefits. In other words, something went wrong on the way to achieving broader competition in the local telecommunications market.

After passage of the Act, regulatory rules were put in place that had profound effects on network investments by both the incumbents and new entrants. As the next section shows, those regulatory rules have significantly discouraged telecommunications investment. This, in turn, has contributed to today's slow economic growth.

¹² Jeffrey A. Eisenach and Thomas M. Lenard, "Telecom Deregulation and the Economy: The Impact of UNE-P on Jobs, Investment and Growth," Progress & Freedom Foundation, Progress on Point, Release 10.3, January 2003, p. 17, citing a Credit Suisse/First Boston report.

¹³ John Malone, "The Benefits of Displacing UNE-P," published in *What's at Stake at the FCC on UNEs: Ensuring Sustainable Competition*, New Millennium Research Council, Washington, DC, Feb. 4, 2003.

¹⁴ Ibid.

¹⁵ Eisenach and Lenard, p. 6.

¹⁶ Transportation deregulation led to falling consumer prices, increases in market efficiency, the development of intermodal competition, growing consumer demand and large increases in consumer benefits. For figures, see Elizabeth E. Bailey, "Price and Productivity Change Following Deregulation: The U.S. Experience," *The Economic Journal*, March 1986, pp. 1-17; Clifford Winston, "Economic Deregulation: Days of Reckoning for Microeconomists," *Journal of Economic Literature*, Vol. 31, Sept. 1993, pp. 1263-1289; and Robert Crandall and Jerry Ellig, *Economic Deregulation and Customer Choice*, Center for Market Processes, George Mason University, Fairfax, VA, 1996.

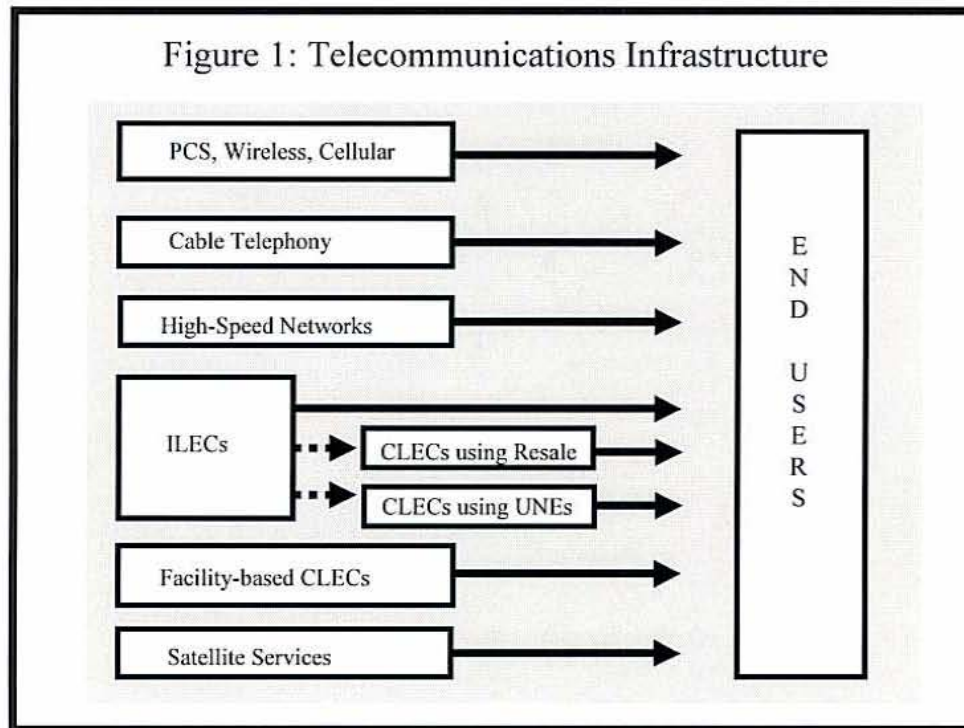
Transitioning to Competition

“Make no mistake, UNE-P may have very limited merits as a transitional strategy, but it is fatally flawed as sustainable local competition.”¹⁷

To spur competitive entry into the local telephone market, the passage of the Act permitted new entrants, CLECs, to provide local telephone services to consumers. These entrants potentially included long distance companies such as AT&T or MCI, as well as new firms. The intent was that these CLECs would eventually build their own networks. Because building alternative networks would take many years, the Act permitted CLECs to resell the ILECs’ services, allowing them to provide phone services immediately to consumers. The Act also permitted the CLECs to lease various parts and functions of the ILECs’ networks – UNEs – at considerable discounts. Leasing UNEs would allow CLECs to build portions of their network, while using portions of the ILECs’ network. Finally, regulations permitted CLECs to lease *all* the parts and functions of the ILECs’ network at the same highly discounted rates as the rules previously allowed for specific parts thereby allowing CLECs to use the ILECs’ entire network, the UNE-P or unbundled network element platform.

As **Figure 1** shows, end-users today can choose among providers using diverse infrastructure architectures and service delivery approaches. Some of these use intermodal platforms to provide voice, data, and video services, while others build their own telecommunications facilities. Still others lease facilities or resell services from the ILEC. The theory was that many CLECs would initially lease facilities and eventually migrate customers to their own networks. As a result of diverse entry into the local telecommunications market, consumers could expect to see benefits from increased competition, as the *invisible hand* of market forces replaced the heavy hand of industry regulation. At least, that was the thinking.

¹⁷ Separate Statement of FCC Chairman Michael K. Powell, Dissenting in Part, Regarding *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers (CC Docket No. 01-338)*, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996 (CC Docket No. 96-98)*, and *Deployment of Wireline Services Offering Advanced Telecommunications Capability (CC Docket No. 98-147)*, FCC, Feb. 20, 2003.



When the Price is Wrong

In setting the prices for UNEs, regulatory commissions almost always relied on hypothetical bottom-up cost models.¹⁸ The models typically excluded some overhead costs, ignored regulatory costs, overlooked actual and prudent investments, missed the recovery of embedded costs, and undervalued the risk of plant obsolescence. Results from these models underestimated wholesale costs, which justified setting lower UNE-P prices – prices so low that they do not permit the full recovery of the actual costs of deploying and operating the telecommunications network. This controversial pricing regime led to many regulatory and legal battles, instead of marketplace battles.

In another controversial move, regulators allowed CLECs to recombine UNEs into a UNE-P service, effectively replicating the resale service called for by the Act but at half the wholesale price called for by the Act. The availability of UNE-P means that CLECs

¹⁸ These are sometimes referred to as total element long run incremental cost studies, or TELRIC studies. The term *hypothetical* refers to the fact that many of these models assume the ILECs operate the most efficient networks possible, one of several assumptions that cause these models to estimate network costs below actual costs.

have no incentive to transition from leasing the ILEC's network to building their own networks, since leasing remains cheaper than building.

Evidence suggests that UNE prices are set so low they have effectively become a subsidy for CLECs paid by their competitors, the ILECs.¹⁹ One study calculated that TELRIC costs (the formula used to price network elements) would need to be marked up 3.3 times in order to recover the ILECs' sunk costs and risks.²⁰ Another estimated that it would take twenty years of productivity-based price reductions to reach the one-time effect of an immediate shift to these artificially low UNE prices.²¹ Four other studies demonstrated that UNE prices were so low that ILECs could not survive solely as wholesale companies.²² Another analysis compared UNE revenues to retail end-user revenues and concluded that UNEs give the ILECs as little as 39 cents on every retail dollar they lose.²³ Similarly, studies by the National Regulatory Research Institute estimated that UNE revenues recover 50% of retail revenues.²⁴ AT&T, which has its own CLEC operations, has publicly estimated the recovery to be approximately 55%.²⁵

¹⁹ This paper uses a generalized definition of subsidy as a redistribution of income between competitors. The extent to which UNE prices recover the ILECs' network costs is an important aspect of understanding the incentives for ILECs and CLECs to invest in networks.

²⁰ Jerry Hausman, "Valuing the Effect of Regulation on New Services in Telecommunications," *Brookings Papers on Economic Activity: Microeconomics*, Brookings Institute, Washington, D.C., 1997, pp. 1-54.

²¹ Alfred Kahn, Timothy Tardiff, and Dennis Weisman, "The Telecommunications Act at Three Years: An Economic Evaluation of Its Implementation by the Federal Communications Commission," *Information Economics and Policy*, vol. 11, 1999, pp. 330-32.

²² Stephen Pociask, "Competition at Bargain Prices," published as "Two Degrees of Structural Separation," *America's Network*, Vol. 102, No. 24, Dec. 15, 1998, pp. 38-42; Stephen Pociask "Structural Separation: Consequences for Michigan Consumers," TeleNomic Research, May 9, 2001; Stephen Pociask, "Structural Separation of BellSouth Telecommunications and Its Effects on Florida Consumers," TeleNomic Research, July 31, 2001; and Stephen Pociask, "Addition by Division: How Dividing-up Ameritech Indiana Would Add Costs and Harm Consumers," TeleNomic Research, May 14, 2001.

²³ Eisenach and Lenard, p. 10.

²⁴ See Billy Jack Gregg, "A Survey of Unbundled Network Element Prices in the United States," National Regulatory Research Institute, updated July 1, 2002, Appendix. The author's most recent study (using January 2003 UNE prices) shows that UNE prices have continued to fall, widening the gap between wholesale and retail prices.

²⁵ "Competition in an All Distance World," AT&T Presentation to NARUC, Nov. 11, 2002, p. 3.

In contrast, regulatory commissions estimate that ILECs can shed only 20% of their cost when the ILECs' retail customers are replaced by the ILECs' wholesale services.²⁶ Therefore, when ILECs lose a retail customer to wholesale, they lose more than half of their revenues but shed only 20% of costs. This divergence between price and costs leads to an absolute decline in cash flow and earnings for ILECs. The financial calamity facing ILECs has been demonstrated in reports issued by the investment community²⁷ and has resulted in downgrades for the ILECs.²⁸ Other analysts have stated the following:

"While the Bells lose roughly 60% of their revenues when they lose a line to a UNE-P based competitor, we estimate that they retain 95% of the costs."²⁹

"For all RBOCs, UNEs are priced below cash operating costs, and radically below total operating cost including depreciation and amortization. The discounts from total costs are 50%-60% below total cost even when total cost does not include cost of equity, a component that is allowed under TELRIC."³⁰

"[C]alculations show that UNE-P rates do not cover costs of providing the line (even without taking the cost of equity into account), even if one pulls out the cost of marketing and customer service that the RBOC theoretically eliminates when it loses a line to a CLEC over UNE-P."³¹

"When the RBOCs lose lines to UNE-P competitors, they are required to maintain the network in its entirety, making it difficult if not impossible to cut costs related to an equal percentage of lost lines."³²

UNE regulations also appear to have spillover effects that hamper other IT investment, including reduced investment for high-speed data networks. That spillover effect has

²⁶ This is sometimes referred to as the percent avoided cost, or the percentage of costs that ILECs avoid when they lose one retail line and gain one wholesale line. The UNE-P model discussed in the next section calculates the nationwide average percent avoided cost discount to be 19.1%.

²⁷ For example, see "How Much Pain from UNE-P? Analysis of UNE-P Economics for the Bells," UBS Warburg, Global Equity Research, United States, Fixed Line Communications, August 20, 2002.

²⁸ Robert A. Saunders, "UNE-P Regulating Toward the End of the Industry?" *Telephony Online*, Sept. 13, 2002.

²⁹ M. Crossman, "No Growth Expected for Bells in 2003," Industry Update, J.P. Morgan Securities, July 12, 2002. The term *Bells* refers to the ILECs that were spun off of AT&T at divestiture (also referred to as *RBOCs* or *Regional Bell Operating Companies*).

³⁰ Anna-Maria Kovacs, "Status of 271 and UNE Platform in the Regional Bells' Territories," Commerce Capital Markets, May 1, 2002.

³¹ Anna-Maria Kovacs, Update, Commerce Capital Markets, Nov. 8, 2002.

³² F.G. Louthan, IV, "UNE-P: Unlocking the Impact to the RBOCs," Raymond James and Associates, October 21, 2002.

reduced demand and investment in other IT industries, including software manufacturers, Internet Service Providers, and content providers, thus reducing economic growth. One analyst wrote:

“Current Federal telecom policy is fundamentally deflationary and unintentionally discourages investment and economic growth. The telecom/tech sector has gone from the propeller of the U.S. economy to an anchor to growth, in part because of the deflationary Federal Telecom policy.”³³

Even after the FCC recently acted to soften ILEC unbundling requirements for high-speed facilities, one analyst pointed out:

“With UNEP continuing to hit RBOC cash flows, and with rating agencies continuing to express their concerns about RBOC balance sheets, the funds for broadband are not likely to become available quickly.”³⁴

This section has provided numerous studies, and quotes from analysts’ reports, concluding that UNE prices *are* being set too low, which hampers IT investment and affects the economy. The next section will quantify how low these UNE prices are being set.

Quantifying the Subsidy

While empirical evidence from the previous section demonstrates that UNE-P rates are too low, a quantification of the subsidy would be valuable for understanding the effects on investment. In this study, a database of UNE and UNE-P prices, as well as average revenue per line, was created, starting from recent work by the National Regulatory Research Institute (NRRI).³⁵ Data on access lines and average revenues per line from the FCC, as well as wholesale prices from other sources, were used to verify NRRI data for

³³ S.C. Cleland, “Telecom/Tech Policy: From the Economic Propeller to Growth Anchor,” The Precursor Group, October 2, 2001.

³⁴ Anna-Maria Kovacs, “Telecom Regulations Note: FCC’s Triennial Highlights,” Commerce Capital Markets, Equity Research, February 21, 2003.

³⁵ Billy Jack Gregg, “A Survey of Unbundled Network Element Prices in the United States,” National Regulatory Research Institute, July 1, 2002 and, most recently, January 2003, Appendix 3.

reasonableness.³⁶ As another crosscheck, some ILECs were asked to check their UNE prices with the database used in this study, in order to incorporate the most recent state commission changes to UNE rates. In this process, a few minor discrepancies were found and updated.

The database also included estimates of the retail costs that ILECs save when they lose a retail customer but gain a wholesale customer.³⁷ This savings is referred to as the *avoided-costs*. Avoided-costs is technically an incremental cost concept, in that it calculates the costs that ILECs save by selling one less line through its retail channel (the end-user customer), instead of serving one more line through its wholesale channel (the CLEC). According to the database compiled for this study, the avoided cost discount in the U.S. is approximately 19.1%, meaning that ILECs save 19.1% of their costs when they lose a retail customer but gain a wholesale customer.

The extent to which UNE-P discounts exceed the costs that ILECs avoid when they provide telephone services through the wholesale channel instead of the retail channel provides an estimate of subsidies paid by ILECs for the benefit of CLECs. If below-cost subsidies exist, then UNE prices are being set at or near predatory levels.³⁸ Furthermore, if UNE prices are set at or near predatory levels, then facility-based entry *is* being inhibited. For example, entrants would be unwilling to invest in their own network infrastructure if it costs more to build than to lease. Therefore, as long as ILEC prices do approach predatory levels, the networks of the future will not be built and present networks will be neglected. This result would altogether undermine the consumer benefits of competition.

³⁶ *Trends in Telephone Service*, FCC, May 22, 2002, Table 16.7 and Table 8.2; "Competition in an All Distance World," AT&T Presentation to NARUC, Nov. 11, 2002, p. 3; and individual company tariffs.

³⁷ The source of this information was "How Much Pain from UNE-P? Analysis of UNE-P Economics for the Bells," UBS Warburg, Global Equity Research, United States, Fixed Line Communications, August 20, 2002, p. 6.

³⁸ Keep in mind that these UNE prices are not transient prices where short-lived losses are sustainable. Instead, these are permanent prices that, if unable to recover costs, will over time result in the ILECs' insolvency. If this is the case, then these permanent regulatory prices are predatory prices. Measures of the divergence between price and cost (such as the Areeda-Turner Test) are used by the Department of Justice and the courts in determining predatory pricing.

The relationship between wholesale and retail prices can provide insight into the degree to which UNE-P prices represent a redistribution of income from ILECs to CLECs. If UNE-P revenues fall considerably short of retail revenues, a large amount of the ILECs' income is at risk. **Figure 2** (below) summarizes the effect of low UNE-P prices on ILECs' revenues.

Figure 2: Revenues At Risk From UNE-P Discounts

<u>State</u>	<u>Revenue At Risk (\$M)</u>	<u>Discount Per Line</u>	<u>Percent At Risk</u>
California	\$4,438	\$181	56.6%
New York	\$3,700	\$283	60.8%
Texas	\$2,766	\$210	47.7%
Illinois	\$2,444	\$278	63.4%
Florida	\$2,313	\$199	47.9%
Ohio	\$1,736	\$241	59.3%
Georgia	\$1,509	\$284	54.2%
Michigan	\$1,365	\$203	55.0%
North Carolina	\$1,105	\$210	46.9%
Pennsylvania	\$1,066	\$124	36.2%
Virginia	\$994	\$206	50.4%
New Jersey	\$951	\$144	46.0%
Indiana	\$948	\$250	63.1%
Tennessee	\$922	\$265	55.6%
Colorado	\$867	\$275	53.8%
Maryland	\$818	\$220	54.1%
Wisconsin	\$765	\$215	53.7%
Massachusetts	\$733	\$161	42.1%
Washington	\$726	\$182	47.1%
Louisiana	\$668	\$262	49.9%
Missouri	\$639	\$180	43.5%
South Carolina	\$616	\$260	51.6%
Alabama	\$583	\$238	46.5%
Kentucky	\$515	\$240	48.7%
Minnesota	\$489	\$150	37.7%
Mississippi	\$418	\$309	50.0%

Figure 2 (Continued): Revenues At Risk From UNE-P Discounts

<u>State</u>	<u>Revenue At Risk (\$M)</u>	<u>Discount Per Line</u>	<u>Percent At Risk</u>
Arizona	\$304	\$92	22.5%
Kansas	\$295	\$196	48.3%
Arkansas	\$287	\$220	52.6%
Oklahoma	\$287	\$142	37.2%
D.C.	\$279	\$282	64.3%
Connecticut	\$274	\$108	28.2%
Nebraska	\$257	\$250	50.2%
Utah	\$236	\$189	44.4%
Oregon	\$171	\$79	27.3%
Iowa	\$156	\$101	31.4%
West Virginia	\$132	\$141	29.0%
New Mexico	\$115	\$119	30.1%
New Hampshire	\$115	\$135	36.7%
Rhode Island	\$112	\$167	45.0%
Maine	\$111	\$145	39.1%
Nevada	\$101	\$75	21.3%
Hawaii	\$94	\$129	28.6%
Idaho	\$92	\$130	31.5%
Vermont	\$79	\$207	47.0%
Delaware	\$76	\$141	40.8%
North Dakota	\$64	\$211	47.1%
Montana	\$56	\$110	26.0%
Wyoming	\$39	\$154	30.1%
Alaska	\$34	\$70	19.4%
<u>South Dakota</u>	<u>\$27</u>	<u>\$85</u>	<u>21.2%</u>
Total	\$37,889	\$203	49.8%

Using today's UNE-P prices, **Figure 2** shows that ILECs stand to lose \$38 billion in revenues if they are forced to sell all their retail services at bargain wholesale rates.³⁹ The value of discounting below retail is potentially worth \$11 billion in revenues for just

³⁹ On a per line basis, **Figure 2** labels this potential loss as "Discount Per Line." As a percent of retail prices, **Figure 2** labels this potential loss as "Percent at Risk."

three states – California, New York and Texas. Overall, the average discount to CLECs is approximately 50%, far exceeding the average avoided-cost discount rate of 19.1%, an indication of divergence between wholesale prices and avoided-costs, and an indication of predatory wholesale pricing. If CLECs were to provide all retail services using UNE-P, they would receive \$23 billion in free cash as a result of discounting below avoided costs. That represents a redistribution of income from ILECs to CLECs.

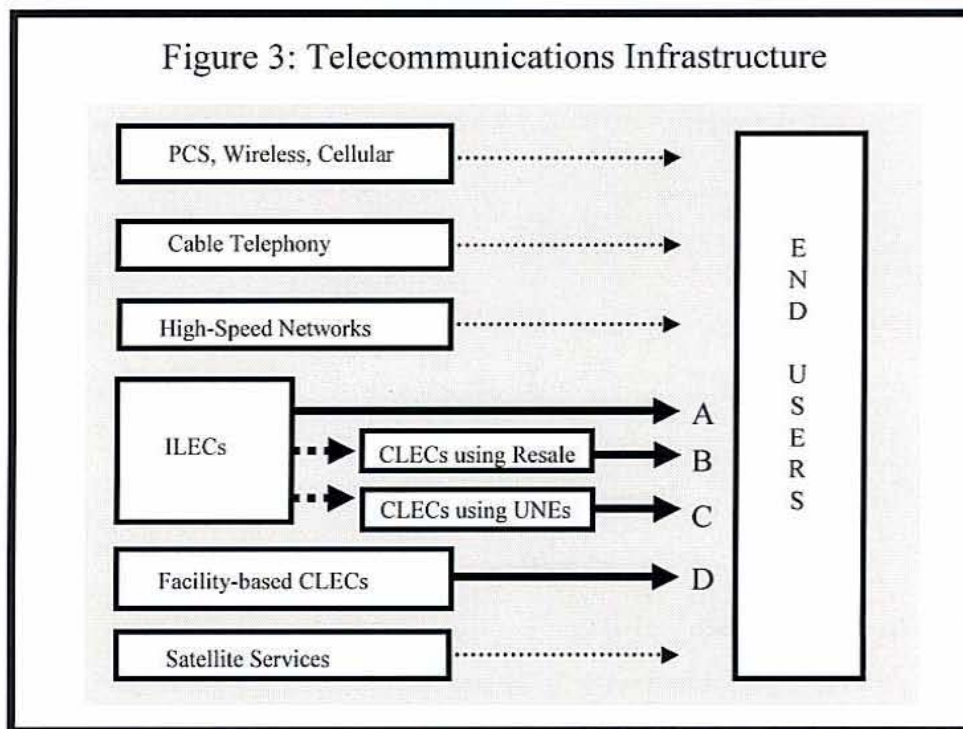
These results are indicative of what would happen if CLECs lease all of the ILECs' retail services at current UNE-P prices. However, the effect of these subsidies is already significant today. As of June 2002, the FCC reported that CLECs garnered 11% of the local telephone market share.⁴⁰ Using specific state-by-state market share results from the FCC, it is estimated that ILECs were losing \$2.3 billion of annual net revenues (retail minus wholesale), as of one year ago. The amount of market share loss continues to grow, as does the total value of the subsidy from ILECs to CLECs. If all states lose 30% market share, the revenue lost from UNE-P discounts will reach \$11.4 billion. In terms of percent market share loss, New York is already at this point. Clearly, the effect on ILEC revenues is sizable and ILECs will soon see their core revenues depleted, and not from competition, but from regulatory mandated pricing.

The question then becomes, how do the ILECs pay for the bargain discounting that CLECs receive? These revenues come from retail consumers who buy local telephone services. Therefore, consumer retail rates contain a subsidy contribution from the ILECs to the CLECs. In return, CLECs that lease the ILECs' services benefit from the subsidy. If CLECs build their own networks, they receive no subsidy at all. Therefore, CLECs are incented to lease, rather than build. Policymakers then must rely on CLECs that lease to pass along the subsidy to their customers in the form of lower prices. If these CLECs do not pass along these savings to consumers, then the subsidy is merely pocketed by CLECs that lease. However, even if the subsidy reaches some consumers in the form of

⁴⁰ The newly released FCC report estimates market share to have increased to 13%. See *Local Telephone Competition: Status as of December 31, 2002*, FCC, June 2003, Table 1. This report excludes some intermodal competitors from its calculation of market share. For example, there are 146 million wireless telephone subscribers, according to the Cellular Telecommunications Industry Association (www.wow-com.com).

lower prices, the ILECs' customers that pay for the subsidy lose. **Figure 2** (above) estimates that consumers pay on average \$203 per year to support every UNE-P line in service.

The sizable discounting of wholesale rates (discounting far below the point where ILECs can recover their unavoidable costs), qualifies these wholesale rates as potentially predatory. As previously mentioned, predatory prices inhibit investment. This appears to be the case here. ILECs are reluctant to invest in a network that they must lease to competitors at prices that do not recover costs, and CLECs are discouraged to resell or build, since leasing is less expensive. Revisiting an earlier diagram, CLECs will demand leasing (noted on **Figure 3** as line C) at the expense of reselling and building alternative networks (noted as lines B and D, respectively). In other words, low UNE price regulations are encouraging CLECs to tradeoff leasing ILEC facilities for building their own facilities.



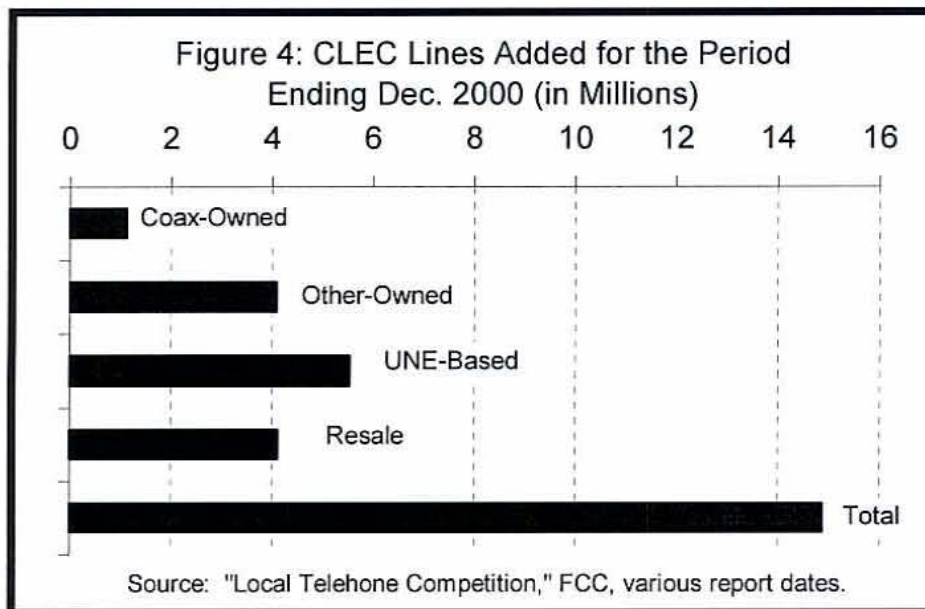
The next section examines the extent to which this tradeoff is actually happening.

Renters vs. Builders

“[W]e’re deploying very little capital to make it work.”⁴¹

If UNE prices are being set below costs, these prices are by definition predatory prices. If wholesale prices are predatory prices, then CLECs will not invest in telephone infrastructure, because the CLECs’ cost of investment exceeds the ILECs’ wholesale price. In other words, if wholesale prices are predatory, CLECs will lease these facilities rather than build them.

Figure 4 (below) shows that, by December 2000, UNE-based services had become a significant avenue to providing local telephone services, accounting for 37% of CLEC lines. Interestingly, at that time, the combination of CLEC-owned facilities (either by Cable TV coaxial networks or other CLEC-owned facilities) accounted for thirty-five percent of CLEC lines. Resale (retail less avoided costs) accounted for twenty-eight percent of CLEC lines. If public policymakers had been correct, renters and leasers would soon migrate off the ILECs’ networks and invest in their own networks.



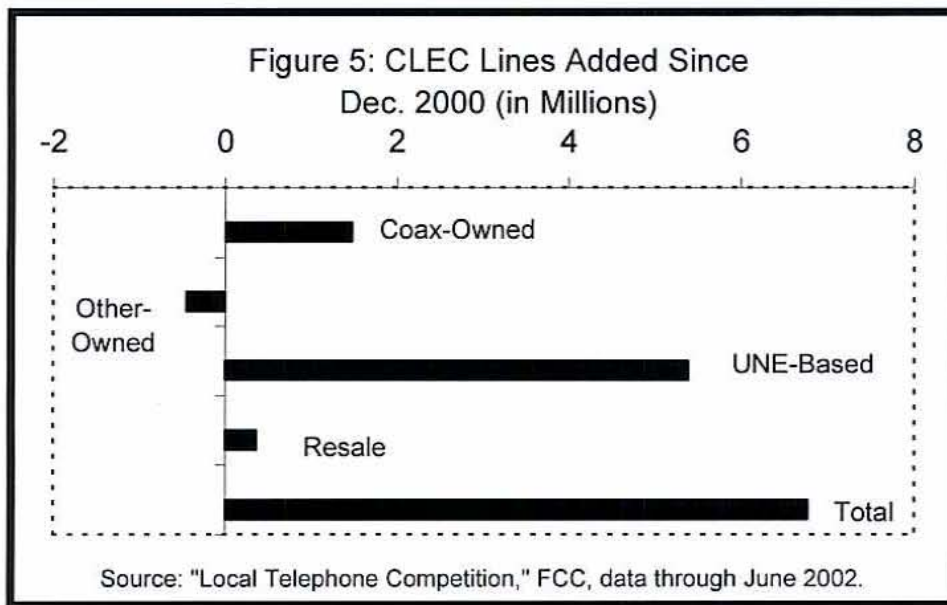
⁴¹ Wayne Huyard, MCI Chief Operating Officer, "Using UNE-P to Develop A Strong and Profitable Local Presence," Goldman-Sachs Telecom Issues Conference Transcript, New York, NY, May 7, 2002, p. 3.

Perversely, regulators have continued to push UNE prices down. Falling UNE prices have propped up weak CLECs, now dependent upon subsidized leasing, and overcrowded the market with competitors, making the whole lot worse off. Worse yet, UNE-P reductions have continued in the last year with what might be called punitive UNE-P reductions, including a 40% drop in California, 45% drop in New Jersey, 33% drop in New York, and 34% drop in Indiana, to name a few. In the last year, average UNE-P rates fell nearly three dollars per leased line, strengthening the conviction of the CLECs to lease rather than build.⁴²

As **Figure 5** shows, the effects of UNE price reductions have been catastrophic. Excluding cable TV facilities, CLEC-owned lines have declined, not just in percentage, but also in absolute terms.⁴³ In December 2000, 37% of CLEC lines were UNE-based. Today, eighty percent of all CLEC lines added are UNE-based. Thus, the decline in CLEC-owned lines and the coincident increase in CLEC UNE-P lines demonstrates the stark end of CLEC investment.

⁴² This compares the weighted average UNE-P price in January 2002 to January 2003. See Billy Jack Gregg, "A Survey of Unbundled Network Elements in the United States," National Regulatory Research Institute, July 2002 and January 2003.

⁴³ In December 2000, twenty-two percent of CLEC-owned lines were from coax-based systems. As of June 2002, all new CLEC-owned lines come from coax-based systems. The most recent FCC report, released June 2003, indicates that another 231,000 CLEC-owned lines have been abandoned in the last six months. This latest figure is not reflected in Figure 5. The FCC reports on local competition can be found at www.fcc.gov/wcb/iatd/comp.html.



In short, regulation is subverting market forces and undermining CLECs that took great financial risk to build competitive networks. The increase in leased lines has come at the expense of CLEC-owned and resale lines. The original premise that CLECs would eventually transition to their own networks has not come true, because of artificially low UNE prices.⁴⁴ Therefore, UNE regulations are responsible for the large drop in network and IT investment. As the next section shows, this has sizable consequences on the economy.

Negative Effects on the Economy

"I also believe that under this decision there will be other negative consequences for the economy. I fear we will see more job loss as carriers cut their capital expenditures and refuse to move forward with new investment and growth against this Picasso-esque regulatory backdrop."⁴⁵

⁴⁴ Again, the exception to this point is *intermodal* competition. Cable and wireless providers have now become formidable competitors for traditional telephone services. These providers do not require UNEs.

⁴⁵ Separate Statement of FCC Chairman Michael K. Powell, Dissenting in Part, Regarding *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers* (CC Docket No. 01-338), *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996* (CC Docket No. 96-98), and *Deployment of Wireline Services Offering Advanced Telecommunications Capability* (CC Docket No. 98-147), FCC, Feb. 20, 2003.

This paper has discussed the sizable and significant link between IT investment and healthy economic growth. Recent declines in telecommunications investment have coincided with regulatory policies that set UNE-P rates at or near predatory levels, discouraging ILECs and CLECs from investing. While policymakers may believe that consumers are benefiting from competition,⁴⁶ they also need to understand the extent to which low UNE rates impede investment and slow economic growth. That economic impediment is not without cost.

Six recent studies have addressed and quantified the extent to which ILECs and CLECs would increase investment (all in the tune of billions of dollars), if UNE regulations were reformed.⁴⁷ In a similar vein, this paper quantifies the effect of the UNE subsidy on the economy and consumers.

Using the Bureau of Economic Analysis estimates, the five-year annual average increase in productivity for private non-farm industries was estimated to be 1.2%.⁴⁸ Based on the Digital Economy 2002 estimate, IT-intensive industries account for all of the nation's productivity increase.⁴⁹ Oliner and Sichel's study estimates that IT investment accounts for 40% of the increase in total factor productivity.⁵⁰ Based on these two results, it is assumed (conservatively) that IT investments contribute to 45% of the annual increase in multifactor productivity.

Because UNE-P regulations are impeding investments, there is a corresponding reduction in economic output and income. Reductions in economic output mean fewer jobs and

⁴⁶ The next section examines the benefits from local competition.

⁴⁷ Six recent studies show the benefits of UNE reform on increasing ILEC and CLEC investment: Cambridge Strategic Management Group; Crandall, Ingraham and Singer; Eisner and Lehman; Haring, Rettle, Rohlf and Shooshan; Haring and Rohlf; and Lehman. Full citation and side-by-side comparison can be found in Jeffrey A. Eisenach and Thomas M. Lenard, "Telecom Deregulation and the Economy: The Impact of UNE-P on Jobs, Investment and Growth," Progress & Freedom Foundation, Progress on Point, Release 10.3, January 2003, p. 18.

⁴⁸ In layman's terms, productivity is a measure of how much output the economy produces relative to the resources (labor, capital and other inputs) necessary to produce that output. If productivity increases, that means a firm can produce more with fewer resources. This can mean that firms become more efficient and consumers pay less for goods.

⁴⁹ See fn. 9.

⁵⁰ See fn. 10.

lower wages, and reductions in productivity mean higher costs for businesses and higher prices for consumers. Therefore, when investments decline, the effect on the economy is pervasive and includes decreases in jobs, wages and spending power.

As a result, the benefit of IT investment to the growth of productivity is worth approximately \$56 billion in output for GDP or (proportionately) \$48 billion to personal income.⁵¹ As previously mentioned, telecommunications investment declined over 40%.⁵² Assuming half of the decline in investment was the result of UNE-P regulations,⁵³ the corresponding annual decline in economic output and national income is equivalent to \$101 per household. In summary, UNE-P regulations have contributed to a decline in investment, which has led to a sizable and significant decline in output and productivity.

The cost and risk for investors from UNE regulations is already reflected in stock prices and in the sentiments of analysts:

“That represents a very high level of risk to investors, risk they can avoid by moving their funds to other industries. Many investors will choose to sit on the telecom sidelines till some clarity emerges, and risks and rewards are better aligned.”⁵⁴

The Benefits of Local Competition

Policymakers argue for low UNE rates as a means to spur competition and speed economic benefits. There are two general benefits of competition – increases in choice and decreases in price. Regulations that promote leasing at the expense of building offer consumers no real choice. CLECs that provide consumers with the same services from

⁵¹ Multifactor productivity statistics are available from the Bureau of Labor Statistics (www.bls.gov). Gross Domestic Product and Personal Income estimates are available from the Bureau of Economic Analysis (www.bea.gov).

⁵² See fn. 12.

⁵³ This percentage decline is roughly equal to the one-year (2001) decline for the communications equipment market. That market has continued its slump ever since then.

⁵⁴ Anna-Maria Kovacs, “Telecom Regulations Note: FCC’s Triennial Highlights,” Commerce Capital Markets, Equity Research, February 21, 2003.

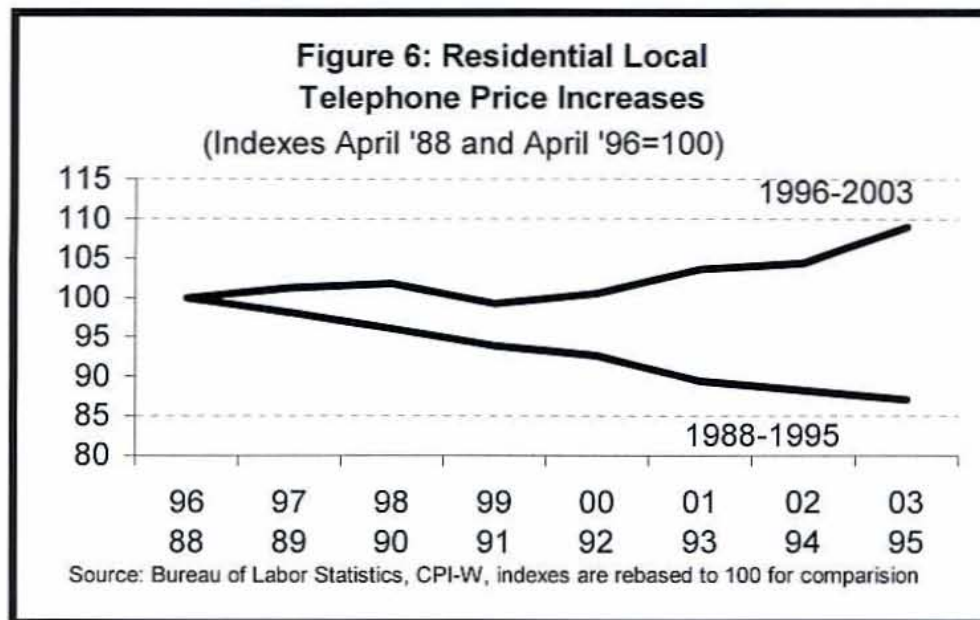
the same networks (the ILECs' networks) do not provide consumers with product differentiation. There is no incremental difference in the availability of services, whether it be caller ID, speed calling, white page directory listings, operator and directory services, or voice mail.

As far as the benefits of price are concerned, some consumers may be benefiting, since they are switching their services to competitors. The predictions about the benefits of competition are worth noting. Several years ago, two studies predicted the benefits of local competition to yield roughly 10% lower prices.⁵⁵ More recently, ALTS (Association for Local Telecommunications Services) estimated the benefits of local competition to be \$1.2 billion for the \$110 billion local telephone market.⁵⁶ From these estimates, while consumers benefit from competition, those benefits appear to be a modest 1% industry-wide, far short of the predicted 10%.

Since CLECs appear to be targeting mostly business consumers and often overlook residential customers, it is not clear that residential customers are benefiting from local competition. An examination of the Consumer Price Index provides no evidence that consumers are benefiting from CLEC discounts. In fact, **Figure 6** shows that local telephone prices have increased. This is most likely due to increases in regulatorily mandated line charges which increased, but were offset by reductions in access fees charged to long distance telephone companies. Therefore, there appears to be no compelling evidence that consumers are saving much from the UNE-P subsidies flowing directly to CLECs.

⁵⁵ See *Economic Impact of Deregulating U.S. Communications Industries*, WEFA, February 1995; and *Deregulation and Consolidation of the Information Transport Sector: A Quantification of Economic Benefits to Consumers*, Joel Popkin and Company, September 29, 1999, p. 72.

⁵⁶ "Progress Report on the CLEC Industry," ALTS, October 17, 2002. The report cites its data sources as Consumer Federation of America/Consumers Union, Telecommunications Research and Action Center (TRAC), SBC Communications and AT&T Corp.



What the previous sections have demonstrated is that retail customers are effectively subsidizing wholesale customers, ironically, for the purpose of achieving low retail prices. If those subsidies are being passed along to end users, the savings are likely to be low (as low as 1% since 1996) and may be reaching business customers, not residential customers. Thus, subsidized UNE-P wholesale services provide consumers with no real choice among competitors and no tangible price savings for local telephone services.

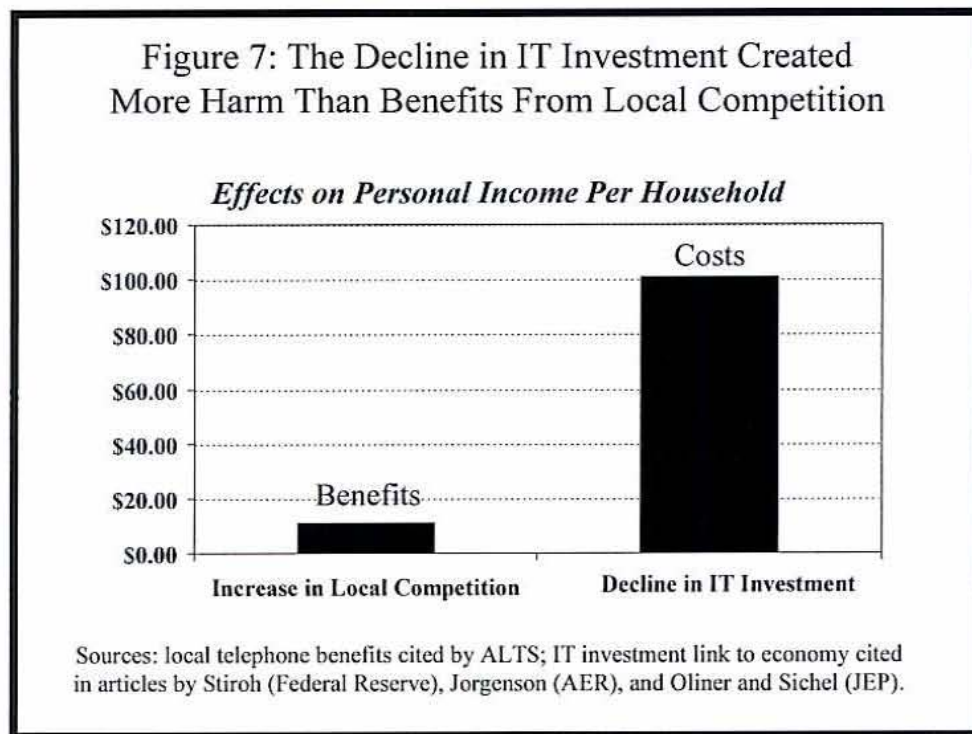
Therefore, when subsidized CLECs win customers, there is a mere illusion of competition. The competitive veneer cannot hide the fact that industry investment is falling, and that consumers are not benefiting from increased market choice and lower retail prices. From this fact, it can be concluded that subsidized UNE-P rates, while helping CLECs, have been a dismal failure for consumers. Customers will never be better off until public policies encourage more facility competition.

Costs vs. Benefits

The previous sections have quantified the costs of UNE-P regulations and the benefits of local telephone competition. In terms of costs, as previously explained, reductions in investment cause reductions in economic output and productivity, which have led to

layoffs and decreased real income.⁵⁷ This paper finds the annual economic costs of UNE-P regulations to be approximately \$101 per household. Said differently, real household income would have been \$101 higher, if telecommunications investment had not been stifled by UNE regulations.

In contrast, the annual benefits of competition have been estimated to be \$1.2 billion, or \$11.41 per household – basically from lower local telephone prices.⁵⁸ **Figure 7** (below) compares the annual cost of UNE-P regulations to the annual benefits of competition and shows that consumers and the economy are worse off from UNE regulations. In other words, public policymakers are intent on stimulating competition, but at a great cost to consumers and the economy.



⁵⁷ The decline in nationwide productivity leads to increases in industry costs and inflation. Therefore, the *real* income (i.e., inflation adjusted income) of consumers decreases.

⁵⁸ Again, this \$1.2 billion estimate was compiled by ALTS. For comparison purposes, it is assumed that all of the benefits of competition will ultimately flow through to consumers.

Conclusion

This study finds that the consumer costs associated with low UNE and UNE-P prices significantly outstrip any consumer benefits. In other words, if low wholesale rates were intended to help consumers, they have been a dismal failure. Today, CLECs are abandoning their investments and riding on the same network that consumers have always used. The end result is that UNE and UNE-P regulations are usurping market forces and harming facility-based CLECs and ILECs. Regulatory intervention, instead of spurring competition, has led to market failure. Maintaining the veneer of competition will require continual regulatory feeding (subsidies) to prop up so-called competitors – and all this without net benefit to consumers. In the end, there is nothing competitive about subsidizing businesses at the expense of consumers.

Regulators should reevaluate current policies and encourage facility investment rather than encouraging freeloading and widespread dependency on handouts. Implementing rational wholesale prices would benefit consumers by encouraging investment, creating jobs, and stimulating economic growth.

About the Author

For over twenty years, Mr. Pociask has worked in and consulted for telecommunications and high-tech industries. As president of TeleNomic Research, a consulting firm specializing in public policy analysis for information technology industries, he is responsible for a wide variety of applied economic studies. A number of his studies are filed at both federal and state regulatory commissions, and recently have included topics such as rate reform, deregulation and productivity incentive plans. Mr. Pociask has appeared before the FCC in its open forums and at its staff meetings. He has spoken to numerous state and local legislators on broadband issues, and testified before the Congressional Subcommittee for Telecommunications, Trade and Consumer Protection on Internet and broadband legislation. He has written about deregulation, long-distance industry cost structure, local exchange competition, the economics of multimedia data networking and cable competition. His study, "MCI WorldCom's Sprint Toward Monopoly: An Analysis of the Proposed Telecommunications Merger," co-authored with Dr. Jack Rutner and sponsored by the Economic Policy Institute, accurately predicted the Department of Justice's decision to block the merger. He has appeared numerous times in the media, including Bloomberg News, CNBC, Telecommunications Reports, Telephony, Congressional Quarterly, America's Network, NetworkMagazine and CNET Radio.

Mr. Pociask previously served as chief economist and executive vice president for Joel Popkin and Co., an economic consulting firm in Washington, DC. Before this assignment, he was chief economist for a major telecommunications provider. He has completed his Ph.D. coursework in economics and has an M.A. in economics from George Mason University.

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